

Heat and Energy Education in Secondary Schools in Japan -Current Status and Perspective

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In this paper is reviewed the current status of heat/energy education in Japanese secondary science education and then some proposals are made to improve the curriculum [1]. In the next course of study to be revised in several years, it is important to teach students the fundamental concept of heat and energy as well as the environment-friendly production/use of energy in daily life [2]. It is of interest to deal with newly developed teaching materials, that is, heat evolution through iron rust formation [3,4] and an exothermic decomposition reaction of hydrogen peroxide solution catalyzed by manganese (IV) oxide. On the other hand, as for endothermic reactions it seems interesting to introduce the reaction of sodium hydrogencarbonate with some weak organic acids such as citric acid into secondary school science classes. It is expected that such fundamental education in secondary schools makes it possible to promote public understanding of the chemical thermodynamics as an important aspect of science literacy.

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